

CAREERS, TECHNOLOGY AND NTID

Robert Frisina, Ph.D.
Director, National Technical Institute for the Deaf

By its very nature the National Technical Institute for the Deaf (NTID) is a Career Education Center. As a national postsecondary program it has the opportunity to develop a perspective on the rehabilitative concerns of this Conference.

On the whole, students entering NTID are vague and uncertain about careers, both as to selection and preparation and as to options and responsibilities associated with eventual employment. It is out of this reality that NTID must telescope, into a very restricted time frame, the whole career process.

By all intents of Public Law 89-36 which authorized its establishment, NTID is to be a multi-purpose institute; as such it provides maximum flexibility in curricula and encourages originality and imagination that will satisfy high levels of aspiration of deaf students. In addition to the fundamental purpose of being an education and training center for deaf students, NTID is also a service center that prepares its students for successful job placement and community living. NTID functions as a training and practicum center to assist in developing professional manpower. Also, an essential purpose of NTID is to function as a research and demonstration center to improve the education of the deaf in general.

Those responsible for developing the program specifications for NTID studied its many historical antecedents and learned from that history. They systematically analysed the characteristics of its target population and the college setting for hearing students into which these young deaf adults would gravitate. Additionally, the psycho-social-educational and communication aspects of deaf people and hearing people were reviewed. Out of all of this came some key recognitions.

First, early profound deafness poses such a serious threat to the even growth and development of a child that career-significant fragmentation in the cognitive and affective domains are extant in postsecondary age students; *Second*, the consequences of deafness do not respond in any measurable way to rhetoric no matter how well intentioned; *Third*, informal and formal social, speech, language, and educational efforts are so frequently adult dominated that deaf children are likely to be qualitatively and quantitatively different from children who are not deaf; *Fourth*, educational and psycho-social practices are overwhelmingly categorical, which is to say that the reactions to a deaf child's behavioral responses are largely yes-no, right-wrong, acceptable-unacceptable, you make me sad-you make me happy, you please me-you displease me, and the like. Nuances, shades of meaning, ambiguities, the "maybe's" are missing which often results in a restricted thinking

mode to an extent to be career-significant; *Fifth*, results of the knowledge explosion of the last quarter century have not been truly incorporated into day-to-day educational practices and fragmentation in applications exist to a point rendering program effectiveness much less than optimum; *Sixth*, knowledge of and experience in the larger world fostered through mass communication and modern transportation in hearing people have not impacted on deaf persons in a like way, the consequences of which are frequently provincial attitudes, limited perspectives, and restricted knowledge of the whole world of which they are part and within which they must move freely as future workers; *Seventh*, the potential role of modern technology in the solution of a major set of problems confronting deaf youngsters was appreciated and a commitment was made to investigate the usefulness of current and future instrumentation available to us; and *Eighth*, existing models in education at the postsecondary levels were only partially useful in organizing to meet the technical, personal, social and communication needs of the target population for whom NTID was intended.

These few selected observations have influenced the organization and approaches to the day-to-day learning at NTID. Let me now be a bit more specific about these observations and their possible inter-relatedness with career education, educational technology and NTID from a perspective of the real worlds into which all of us are embedded.

The last two hundred and fifty years have seen man moving unceasingly toward an industrialized world. By the mid-seventies forty percent of the entire world's population may be living in societies in which industrialization is well established, and by then all of the world is likely to be involved in some level of industrialization. America is there already. The experience of getting there has made it clear that technical competencies on the part of its citizens are fundamental to the establishment and continuance of an industrialized society. A broad distribution of professional, managerial, and technical specialists among the work force is basic to developing and operating that society. And in a democracy highly developed personal, social and communicative skills along with technical competencies are essential for its survival.

History reveals that the usual deaf man has not reached these policy-making and supervisory levels that allow one to fully participate in the affairs of his environment. And until such time as deaf people attain genuine parity with their hearing peers, none of us can in truth claim success.

A great deal has been learned about the opportunities and the hazards of living in an industrialized society; particularly as related to linguistic competence, (occupational, geographic, social, and psychological) mobility, occupational diversity, urbanization, leisure time, and education. It is incumbent on all of us to evaluate and to take into account the significance of these factors in our short and long-term planning efforts. These are germane to career education at any educational level and absolutely critical in a special institution, such as

NTID because of its close relationship with the technologic sector of the industrial society in which we live.

We are reminded in "The World We Have Lost," that, "Time was, and it was all time up to two hundred years ago, when the whole of life went forward in the family, in a circle of loved, familiar faces, known and fondled objects, all to human size. That time has gone forever. It makes us very different from our ancestors."¹ And in this context, it can be said that the seeds of the Apollo program were sown some two hundred years ago when the scientific method was applied to the development of production techniques. For it was the industrial revolution spawned in England and exported to America that gave rise to new man-machine relations that presently characterize this nation. What makes us very different from our ancestors is that the social structure of our society has been shaped in large measure by the way in which it has produced its goods and services.

This mechanized industrial society of ours has been characterized by a strong diversity of people backgrounds, an unquestioned work ethic, heavy pluralism in beliefs, dynamic institutions and bigness in its bureaucratic structures. Of significance to the substantive aspects of our concerns is the observed *rate of social change* that has accompanied rapid technologic changes. And this is equally important because of the *secondary effects* of the remarkable productivity of a nation of working people. It should not surprise anyone who reads the daily papers that many people in the work force are not experiencing what one might call job satisfaction. One hazard to current complex formal organizations is alienation. And alienation from work has been found to encourage reliance upon controls *external* to oneself and thereby leads to apathy, indifference, and non-purposive life styles. Self-concept and personal identity are crucial for personal and social development. "Personal identity is the sense that you actually are the person you say you are, and that this sense is confirmed by others. The more people there are who recognize your claims to identity, the stronger your sense of identity is."² Yet these are threatened by the psychological distance of standardization and procedures, and the anonymity common in industrial societies. In truth we live in a world demanding multiple identities where it is important that people have opportunities to "...exchange their views of each others' claims to identity; and this exchange requires empathy—the capacity to imagine yourself in the role of another. If you have a society with strong identities plus empathy, you have an integrated network of exchange of identities and you have consensus which means a reasonable sharing of values—and

¹ Laslett, Peter, "The World We Have Lost," in *Man Alone*, (eds.) Eric and Mary Josephson, Dell Publishing Co., Inc., New York, 1962, p. 93.

² Shayon, Robert L., "Passivity Versus Participation: The Challenge of the Mass Media", *American Annals of the Deaf*, Vol. 117, No. 5, October, 1972, p. 490.

this is an ethical society. The essential element is the sharing of perspectives..."³ This brief reference to these concepts illustrates some of the subtleties significant to career education and the planning for a technical institute which surely is destined to have a marked influence on generations of deaf persons to come.

If the rate of technical advances were to plateau in this country, the efforts required to provide deaf persons with useful and meaningful career opportunities would remain a distinct challenge. Yet unquestionable evidence suggesting continued technologic advances is with us in the form of automation. Although automation has not been as fully incorporated into American industries as was predicted when computers first became available on the commercial market, automation has moved the American production process toward a stage termed the post-industrial period in America. In other words, we are entering yet another new era in man-machine relationships. This development contains far-reaching implications for industrialism as a social system, for the work-related values hitherto used in the allocation of social status, for the nature and purposes of our educational systems, and for a time of struggle in the appropriate use of our natural resources and use of leisure time.

What this means for NTID and technical education for deaf students generally is that both must develop with one foot firmly planted in the technology supporting the mechanized industrial system, and with one foot poised for the post-industrial period which will place greater emphasis and hence, greater social value on professional, semi-professional and technically trained people. Hence you will find in NTID a series of technical education programs ranging from certificate, diploma, and associate degree levels to bachelors and masters degrees in business, engineering, graphic arts, photographic, applied arts and health related technologies. As the whole of the work force moves upward the pressures exerted upon the poorly educated, for whatever reasons, will be debilitating. The major work force of the post-industrial period in the United States will find on the one hand a clustering toward the service professions, and on the other, movement toward highly skilled technical positions in the manufacturing sector of the economy.

The significance of this should be clear to all of us in the education of the deaf and particularly to NTID, and it is that "... the whole structure of modern society is geared to innovations, those who initiate or adapt to change are rewarded, those who do not or cannot are penalized."⁴ Equally significant is the importance of increased education and the development of high levels of personal, social and communicative skills. To achieve such levels students at NTID parti-

³ *Ibid.*

⁴ *Economic Report of the President, 1964*, Government Printing Office, Washington, D. C., 1964, p. 85.

participate in work orientation programs, job simulation environments, in-house work experiences, community volunteer efforts, cooperative education work experiences, experimental educational theatre and a vast array of on and off campus social-cultural events.

Updating technical education programs can be accomplished by researching the employment placement operation and having these realities serve as feedback to the curriculum modification effort. The steps to be taken in the spheres of personal and social development so as to remain current are much less certain than the required technical competencies. It is well known, that to achieve shared goals it is necessary that the manner in which an individual evaluates himself and his role corresponds to the way in which he is evaluated by others. "A person is motivated to act in socially prescribed ways, at least in part, because in so doing he acquires social status which confirms a favorable image of himself. Effective internal controls, then, are dependent upon; 1) a clearly defined and consensually held set of norms defining appropriate behavior, 2) individuals who have learned their social roles and who have acquired the skill needed to perform them, and 3) individuals who are committed to, rather than alienated from, the social unit within which the norms are shared." ⁵

A complicating factor to be recognized is the industrialized society itself in that, 1) "...the relatively low level of social structuring characteristics of these societies means that norms are not clearly defined, and 2) a high level of structural differentiation reduces the likelihood of consensus regarding definitions of appropriate behavior." ⁶

Now, into this fluid circumstance superimpose a target population of profoundly deaf students with an average hearing level of approximately 100db, 97% of whom are prelingually deaf; whose average age at entrance is 20 years; whose general educational functioning is around eighth grade but lower in reading and other verbally loaded tasks; a group which possesses a broad range of communication skills; youngsters who are somewhat naive about the world of work; and a group characterized by uncertainties in settling upon a career objective primarily because of a paucity of knowledge and experience in work-related environments; and a group with limited knowledge of the opportunities found in educational institutes of technology.

Couple these factors with the requirement of successful employment in a modern society, and at the same time be called upon to perform the task within a one to four year span, with an average of two years or so. Existing postsecondary educational systems and known results with less educationally handicapped groups were not very encouraging models. The low retention rate historically experienced in two and four-year institutions for non-deaf students would

⁵ Faunce, William A., *Problems of an Industrial Society*, McGraw-Hill Book Company, New York, 1968, p. 137.

⁶ *Ibid.*

be unacceptable for deaf students who have had such limited opportunities for further educational training beyond the high school years. An educational model necessary to make the vast majority of NTID students successful in their preparation for employment was not in existence. Therefore, a systems analysis of students' needs aided substantially in planning the NTID program. Operationally, NTID's educational system represents an application of the scientific method to the development of educated technologically-oriented graduates.

To date, some 1,000 students from 46 states and territories have been served. A most sensitive short-term indicator of the efficacy of an emerging educational program at the college level is the attrition rate of its students; the long-term measure of the usefulness of such programs lies in the eventual personal, occupational, and social outcomes of its graduates. The NTID system, with a broad range of abilities in its enrollees, has produced a very low rate of attrition; less than 10% of all students who have entered NTID since September of 1968. In order to develop technical competence and high levels of personal and social competence in its graduates, it is necessary to develop programs and experiences that keep students long enough for them to be able to choose a career objective, become motivated to work and to succeed, and to develop those personal and social attributes that will increase the probability for successful employment. Hopefully, the results of such conferences as this will eventually improve these levels of functioning prior to their enrollment at NTID.

Another feature of NTID is its research and demonstration stance which is manifested in all its departments wherein each has a built-in planning and evaluation component; the object being that rational change is likely to occur when the knowledge and skills of a variety of disciplines (including speech pathology and audiology) are incorporated into the daily operations of the program. This procedure is in marked contrast to the conventional approach where research and demonstration centers and needed specialties exist on the periphery of the day-to-day instructional programs. From a management perspective, this approach requires that the mission of the institution be made explicit and agreed upon by prospective staff and faculty members; these requirements are precursors to commitment and internalization of the institute's mission on the part of its professionals.

The mission of an institution determines in large measure the means by which its needed resources should be managed. Thus, what might be appropriate for NTID might not be appropriate for another program which has dissimilar clientele or objectives. In the case of NTID, its organizational and functional status at any point in time, is designed to be sensitive to the nature of the target population to be served, to the fluid characteristics of employment markets, to the resources made available to accomplish the task, and to the ability of the educational system to modify itself so as to keep the curricula in harmony with the realities of the economic sector in our society.

In summary, let me suggest that NTID is an important historical development in the education of deaf persons. Quite aside from the personalities involved in it at any point in time it can and should become a beacon for deaf persons caught up in the changing seas of employment and caught up in the turbulence of daily living in their transitional years. In particular an educational institution such as NTID with its close ties to the business and industrial communities must possess vitality and built-in mechanisms for rational change and adaptability. For it is becoming increasingly clear that the most "...revolutionary consequences (of automation) in the long run is the shift toward a labor force composed primarily of professional, technical and social workers. Although unskilled or semiskilled manual and clerical jobs may never entirely disappear, the technologic capability to eliminate such jobs already exists and the eventual use of this capability seems inevitable. Also, the demand for teachers, engineers, scientists, doctors, nurses, medical and dental technicians, engineering technicians, skilled machine maintenance workers, computer programmers, and many other similar occupations will continue to grow at an accelerating rate in the foreseeable future. Other occupations not now considered professions, business management for example, are rapidly becoming professionalized in the sense that they increasingly require extensive formal training. Although it may be many years before these patterns of change in occupational distribution have run their course it is no longer difficult to imagine a society in which most of the employees of large organizations will be professionals, technicians, or skilled tradesmen and in which most of the rest of the labor force will be engaged in some form of independent service activity.

Finally, some hint of the extent to which such a society would differ from our own can be seen in the results of studies comparing communities with different occupational compositions. In contemporary communities having a high proportion of professionals in their labor force, there are higher rates of citizen participation in community affairs; a greater demand for medical, dental, legal and other professional services; class, status, and power arrangements based more on education and less on manipulation of status symbols; greater use of cultural, recreational, and other leisure facilities; more concern with education as reflected in better financed school systems and in a higher proportion in school; lower birth rates; and lower rates of crime, divorce, mental illness, and other symptoms of social disorganization."⁷

Much valuable knowledge and experience have been gained in these emerging years of NTID and much more remains to be accomplished. Continuous research and evaluation can be expected in such areas as career development and career selection; curriculum development and evaluation; learning strategies employed by deaf students of the type who attend NTID; the significance of communication skills

⁷ *Ibid.*, pp. 167-168

in various employment environments; cooperative education; compensatory education; economic accomodation of deaf people; management and marketing applications in the education and placement of deaf students; instructional techniques and technology in education; the development of personal adjustment and self-esteem maintenance; the development of social competence; the more specific processes of socialization as related to the variety of employment circumstances into which NTID graduates will gravitate; and much more knowledge of the interaction patterns of deaf and hearing people in integrated educational and employment environments. These can be years of learning for all of us and I invite you to share with us in moving forward.